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ABSTRACT

To gather information on the relationship of parent behavior during reading situations to preschool children's cognitive ability, a study of 12 female and 9 male preschool children and their parents was undertaken. Children were administered a battery of tests that measured intelligence, creativity, perceived self-competence, and language skills. Parent-child interactions during reading time were assessed by videotaping parents while they read two stories to their children, one containing words and concepts easy for the child to understand, the other containing vocabulary and concepts developmentally advanced for the child. These sessions were qualitatively assessed according to nine variables, which were: parents' adjustment to the child's needs, feedback, verbal stimulation, type of utterances outside of reading, and consistency of storytelling; children's orientation and level of utterances; general interaction; and length of interaction. Finally, questionnaires completed by parents provided information on the quantity of home reading, the dynamics of parent-child reading sessions, and parents' reading practices. Results revealed significant relationships between the quantity of parent-child reading interactions and the child's level of vocabulary development. Children's creativity was related to the quality of parent-child reading interactions, and children's perceived competence was related to both the quantity and quality of parent-child reading. The parent questionnaire and qualitative rating scales for reading activities are appended. (BCY)

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Influence of Parent-Child Interaction During Reading on Preschoolers' Cognitive Abilities

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ABSTRACT

In the present study, the relationships among parental behaviors during reading situations and preschoolers' cognitive abilities were examined. Each preschooler was administered a battery of intelligence, creativity, perceived competence, and language tests. Parent-child interactions during reading time were assessed by videotaping parents reading two stories to their children. One story contained words and concepts that were easy for the child to understand; the other contained vocabulary and concepts developmentally advanced for the child. Parents completed a questionnaire assessing their own reading habits as well as how often they read to their children. A measure of parental interactional style was computed based on a number of verbal and nonverbal factors. Results revealed significant relationships between the quantity of parent-child reading interactions and the child's level of vocabulary development. Children's creativity was related to the quality of parent-child reading interactions. Moreover, children's perceived competence or self-concept was related to both the quantity and quality of parent-child reading. These findings suggest that several aspects of preschoolers' cognitive development may be influenced by the quantity, as well as quality, of parent-child reading interactions.

INTRODUCTION

Parents are an important determinant of children's cognitive abilities. Parental effects are seen not only through genetic contributions and through the environment they provide for their children, but also through interactions with their children in learning situations. One special learning situation that may have implications for preschoolers' cognitive development is parent-child interaction during reading. In turn, parent interactions during reading may influence the child's overall level of perceived competence, especially as a learner.

Through reading, parents can influence directly their child's learning. Story-time offers an abundant learning opportunity, especially for language acquisition, in young children. In observing the effects of active parental reading on language acquisition, Donachy (1976) concluded that during the preschool period, the child grows most rapidly in terms of language and cognitive development. He found that children receiving the most parental attention made the most significant gains on language acquisition tests. Exposure to reading and experience with books through parents have also been found to be related to emerging literacy skills during the preschool years (Bus & van IJzendoorn, 1988) and to children's reading achievement during grade school (Scarborough, Dobrich, & Hager, 1991).

The quality of parent-child interaction during reading may also differentially impact children's language development and emergent literacy (Teale, 1981). In an intervention study,

Whitehurst, Falco, Lonigan, Fischel, DeBaryshe, Valdez-Menchaca, and Caulfied (1988) found that children, whose parents were given specific instruction to increase open-ended questions, to respond positively to children's attempts to answer questions, and to decrease straight reading and simple questions that do not require verbal answers, scored significantly higher on an expressive language test and had more complex utterances than those whose parents read in a customary fashion.

Parent-child interactions during reading may also impact the preschool child's level of perceived competence, especially in cognitive tasks. Quality of parental feedback and instructional style during reading may be important determinants of how the child views himself or herself as a competent learner.

In the present study we examined the effects of quantity as well as quality of parental reading on preschool children's language ability, creativity, and perceived self-competence. In addition to determining the amount of time parents spent reading to their children, we assessed parent-child interactional styles during reading of easy and difficult storybooks.

METHOD

Subjects

Twenty-one preschool-aged children, 12 girls and 9 boys, and their parents participated in the study. The children's ages ranged from 3 years 7 months to 6 years 3 months with a mean age of 4 years 9 months. Children were enrolled in either a cooperative preschool center or a traditional day-care center.

Materials and Procedure

Each child was seen individually at their preschool or day-care center for three 20 minute sessions. During these sessions, children were administered the Circus Test of Creativity, the Peabody Pictorial Vocabulary Test (PPVT), and two subtests of the Wechsler Primary Preschool Scale of Intelligence-Revised (WPPSI-R): Information, and Vocabulary. To assess self-concept, Harter and Pike's (1984) Perceived Competence and Social Acceptance Scale was administered which yield information about four aspects of self-concept: cognitive competence; physical competence; peer acceptance; and maternal acceptance.

Parent-child interactions during reading time were assessed by videotaping parents in their home, reading two stories to their children: one story was at an easy cognitive level for the preschoolers and one story was cognitively difficult. Assessment of the quality of the parent-child interaction was functionally

defined on nine levels for each of the stories: the parent's adjustment to the child's needs and level of understanding, the parent's type of feedback to the child's utterances, the parent's verbal stimulation, the parent's type of utterances outside of reading, the parent's consistency of story-telling, the child's orientation, the child's level of utterances, a general interaction score, and the length of the interaction. Each of these variables, except for the length of the interaction which was measured in terms of minutes and second, was assessed on a five-point Likert rating scale.

Quantity of home reading was assessed through a questionnaire that was completed by the parent. The questionnaire included questions involving who initiates the reading, who chooses what to read, how often and how long are the reading periods, and the reading practices of the parent.

RESULTS

Interrater and interitem reliability was assessed for the coding of the parent-child interactions. A random subset of eleven interactions were used to assess reliability. Interrater reliability for the interactions yielded a Pearson correlation of r=.66, p=.000. Assessment of interitem reliablity for interactions involving the easy story yielded an alpha coefficient

of .87. The alpha coefficient for items for the difficult story was .90.

Children's scores on the two WPPSI-R subscales were combined to yield a verbal IQ measure (VIQ). All performance measures (VIQ, PPVT, and Circus Creativity) were standardized to allow for comparison across domains.

A series of partial correlations controlling for age were obtained between the cognitive measures and the quantity and quality of the parent-child interactions. Quantity of parental reading to the child was found to be significantly related with children's PPVT scores, r=.52, p=.03. Quality of parent-child interaction was significantly related to children's total creativity scores for both the cognitively easy story, r=.59, p=.01 and the cognitively difficult story, r=.54, p=.02. One aspect of creativity, unusualness of children's productions, was also significantly related to the quality of parent-child interactions for both the easy story, r=.63, p=.01, and the difficult story, r=.74, p=.001.

Children's overall level of perceived competence was related significantly to the quantity of parental reading, r = .63, p<.01. Preschoolers' perception of their cognitive competence and their view of maternal acceptance were also significantly related to the quality of parent-child interaction for the cognitively easy story, r = .53, p = .02 and r = .59, p =.01 respectively.

DISCUSSION

Preschoolers' level of receptive vocabulary development was significantly related to the quantity of parental-child reading. The quantity measure assessed both the frequency and amount of reading the parent does with preschooler as well as the parent's own reading habits. Both aspects are likely to increase the child's vocabulary level through direct exposure to varied types of books, as well as language interaction between the parent and the child.

Quality of parent-child interactions was found to be related to children's creativity. Two alternative explanations of the data are suggested. Parents who were rated high on the quality measure may have been more likely to encourage imaginative interpretation of the reading material, as well as to emphasize divergent thinking about objects and events depicted in the reading material. Or it may be creative children are more likely to take an active, inquisitive role during the reading interaction which would result in the high quality scores.

Children's views of their own competence or level of self-concept were also found to be related to the quantity and quality of parent-child reading. Parental behavior during reading may

provide feedback to children about their own capabilities and strengths as emergent readers and processors of information.

Future research should examine which specific aspects of parent-child interaction during reading influence children's cognitive development and children's level of perceived competence. Further questions raised by the research findings include: (1) is quantity of reading important because of the wider exposure to vocabulary words in the reading material or is the critical influence the amount of verbal interaction between the parent and the child? (2) which aspects of the parent-child interaction are most predictive of preschoolers' emergent literary skills? (3) which components of the parent-child interaction during reading influence children's perception of their cognitive competence?

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Parent Reading Questionnaire

Total number of children in family _____ Ages _____

Indicate highest educational level achieved by father or mother:

_____ less than high school
_____ high school diploma
_____ some college
_____ AA degree
_____ BA/BS degree
_____ MA/MS degree
_____ Ph.D., J.D., M.D., D.D.S.

QUESTIONS ADDRESSING THE PRIMARY PARENT-TO-CHILD READER:

How often, on average, do you read weekly?
_____ I read at least once a day
_____ I read every other day
_____ I read once a week
_____ I read once a month
_____ I rarely read independently

Which of the following type(s) of literature do you usually read on an individual basis? (Check all that apply)
_____ daily newspaper
_____ Sunday newspaper
_____ news magazines (e.g., Newsweek, Time)
_____ business periodicals
_____ scientific journals
_____ science fiction
_____ non-fiction
_____ romance novels
_____ general fiction
_____ other (please specify) _____

I most often read (check all that apply)
_____ in bed
_____ while I eat
_____ while watching television
_____ in the living room
_____ outside of the house
_____ other (please specify) _____

QUESTIONS CONCERNING YOUR CHILD'S READING:

How often do you usually read to your child?
_____ daily
_____ every other day
_____ weekly
_____ on occasion
_____ never

On average, when you and you read together it is for:
___ 5 minutes ___ 10 minutes _____ 20 minutes _____ 30 minutes or more

What kind of books does your child like to read:
_____ books with all pictures
_____ books with alot of pictures and some words
_____ books with a few pictures and long word sentences
_____ books with no pictures and all words

Is there a time of day that you ususally read to your child?
_____ yes _____ no
If yes, please indicate _____

When you and your child read, who usually selects the reading material?
___ you ___ your child ___my spouse ___ my spouse and I

How often does your child look at books my himself or herself?
____ daily
____ every other day
____ once a week
____ rarely
____ never

How often does your child ask you to read with him/her?
___ 10% ___10-20% ___20-50% ___ 50% or more

How many books does your child own?
___ 0-5 ___ 5-10 ___ 10-25 ___ 25-50 ___ 50 or more

How often does your child go to the library?
___ daily
___ weekly
___ monthly
___ on occasion
___ never

These scales are used to help describe what a particular rating should look like. However, they are not exclusive. If you feel a score is justified then mark in the column or below why and chose that score. The general score is a place for you to estimate the quality of the interaction that was or wasn't captured by the above measures.

Here are some general rules to keep in mind:

1) Try not to compare interactions with those you have seen previously. Try to keep an open mind.

2) Use the back of the score sheet to make notes or to keep tallies from the interaction. (This can be especially helpful on the longer story so that the whole story is what you are rating on, not just the end.)

3) Don't feel like you have to score everything that you see in the tapes.

4) do not double code or score the same action in two places.

5) If during the story more than one of the scores could be recorded mark the one that occurs most frequently. For instance, the parent asks a lot of yes/no questions and one or two open-ended questions. In this case the score should be a four because that is the score that captures the average utterance type of the parent.

Parent Portion of Interaction

1) Adjust to needs/level of child while reading

5 - Child directive speech and recaps the story, "Do you remember...?" or "Do you know what ... is?" Looks at the child to see if s/he understands or is following.

4 - Child directive speech and looks at child's face asks child if s/he understands.

3 - Child directive speech

2 - Never checks to see if child understands

1 - Not child directive speech and never looks at child

2) Quality of feedback or guidance after a question was asked

5 - Helpful, clear, positive, detailed.

4 - Little comment such as, "uhh, uhmum, or uha"

3 - No comment keep reading after child's answer

2 - Unclear

1 - Not helpful, negative

3) Verbal Stimulation

5 - Highly talkative, very inflected voice, talks often, gives detailed answers to child's questions, allows the child room to interrupt

4 - Moderate level of outside talking from both parent & child, parent reads at a slow pace stopping every once in awhile to talk about pictures or story

3 - Gives yes/no answers, slower reading, few parental stops

2 - Says very little outside of reading, fast pace reading with parent interrupts, still monotone

1 - Not talkative outside of reading, no inflection in voice - monotone, fast reading

4) Type of utterances aside from reading

5 - Open ended questions that require detailed response from child i.e., "What do you think about...?, Where does...?"

4 - Yes/no questions such as, "Is that...?" or "Do you think...?" tutorial comments, explanations.

3 - Statements or descriptions of pictures, "That is...?"

2 - Very few interruptions in the reading. Nontutorial, such as "That looks like brother Jimmy's toy."

1 - Straight reading. No interruptions. No pauses to talk about pictures.

5) Consistency of reading style

5 - Maintains a consistent level of slow "story-telling" throughout the book.

4 - Starts "reading" near the end of the book.

3 - Starts "reading" near the middle of the book to the end.

2 - Brief "story-telling" in the beginning.

1 - Straight "reading" throughout the book.

"Story-telling" is reading slowly, stopping to look at and talk about the pictures. Telling a story by using voice inflection, etc.

"Reading" is turning pages with very few interruptions for comments and questions. Very little voice inflection.

Children Portion of the Interaction

6) Degree of task orientation

5 - Always visually oriented to the book or to parent. Remains engaged throughout the book. Is not easily distracted.

4 - looks away once or twice. Is not easily distracted.

3 - Spends half of the time looking at the book and half of the time looking away.

2 - Looks at book or parent very little.

1 - Never is visually oriented toward the book. Does not appear engaged or motivated throughout the book. Easily distracted by the video equipment.

6) Child's Utterances

5 - Initiates questions. Interrupts reading to ask questions.

4 - Initiates comments, especially about the pictures. Gives detailed answers to questions asked by the parent.

3 - Makes statements only when there is a pause in the reading.

2 - Only speaks or nods yes or no in response to parental questions.

1 - No talking.

Coder _____

Book _____

easy hard

Interaction #_____

Parents Portion of Interaction

1) Adjust to needs/level of child while reading	1	2	3	4	5
2) Quality of feedback or guidance after question was asked	1	2	3	4	5
3) Verbal stimulation	1	2	3	4	5
4) Type of utterances outside of reading	1	2	3	4	5
5) Consistency of reading style	1	2	3	4	5

Childrens' Portion of the Interaction

1) Degree of task orientation	1	2	3	4	5
2) Child's utterances	1	2	3	4	5

3) General Score of Interaction 1 2 3 4 5

Time ____